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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,796	12/09/1999	DONALD F. GORDON	19880-000720	9295

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EXAMINER	
HUYNH, SON P	

ART UNIT	PAPER NUMBER
2611	17

DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/458,796	GORDON ET AL.	
	Examiner	Art Unit	
	Son P Huynh	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 December 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-19, 21 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4-6, 9, 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the non-realtime encoder" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the realtime encoder" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claims 11 and 12 recite the limitation "the realtime and non-realtime encoders" in lines 2-3 and line 3 respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 8, 11, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naimpally (US 5,619,337), and in view of Mao et al (US 6,459,427).

Regarding claim 1, Naimpally discloses encoder 112 comprises video encoder 140, audio encoder 142, data encoder 144 are MPEG-2 encoders for encoding video, audio and data in PES packets, the PES packets are supplied to a transport encoder/multiplexer 146, the multiplexer 146 formats each of the PES packets into one or more transport packets, these packets are transmitted to FIFO buffer 150, the transport packets then sent to multiplexer 116, the multiplexer 116 reformats and interleaves the transport packets for the individual single program transport streams into

a multi-program transport streams (see figures 1A, 1B and, col. 3, lines 50-61; col. 5, line 30+). Inherently, the apparatus comprising:

a first encoder (MPEG data encoder 144) configured to encode non-realtime content into encoded non-realtime content slices;

a second encoder (MPEG encoder 140 and encoder 142) configured to encode the realtime content into encoded realtime content slices;

a remultiplexer (multiplexer 146) configured to repacketize the encoded non-realtime content slices and the encoded realtime content slices into transport packets. In addition, Naimpally discloses providing timing signal containing timing information for each of respective one of the transport packets in the stream and means for encoding the time information (see col. 10, lines 60-65). However, Naimpally does not specifically disclose a re-timestamp unit coupled to the remultiplexer and configured to provide timestamps to be applied to the transport packets in order to synchronize realtime and non-realtime content.

Mao discloses server 80 receives MORECAST service such as EPG, Home navigation page, etc. (see col. 4, line 33+). Real time encoder 50 encodes the signal into an MPEG-2 program transport stream. digital satellite downlink Integrated Receiver Transcoder (IRT) 60 receive the satellite signal that carries a digital MPEG-2 compressed stream. MPEG-2 remultiplexer 70 can receives signal program transport streams or multiple program transport streams through DVB ASI up to 270 Mbps. The remultiplexer 70 can performs remultiplexing signal or multiple program transport

streams into multiple program transport streams at different bit rate, re-assign PID (packet ID), adjust PCR (Program Clock Reference), and modify PAT/PMT, and insert condition access message such as ECM and EMM (see figure 1 and col. 5, line 1+), and the data such as Electronic Program Guides, Navigation pages, etc. and the carousel data is synchronous with digital broadcast program content (see col. 4, line 35+). Necessarily, a re-timestamps unit is configured to provide timestamps to be applied to the transport packets. However, Mao does not specifically disclose synchronize the realtime and non-realtime contents. Official Notice is taken that synchronization of real time and non-real time contents is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Naimpally and Mao to use the well-known teaching in the art in order improve data transmission.

Regarding claim 2, Mao teaches the apparatus is located within headend 20 of a cable distribution system (see figure 1).

Regarding claim 3, Mao teaches the remultiplexer 70 adjust the PCR (see col. 5, lines 15-24). Necessarily, remultiplexer 70 comprises a clock unit configured to provide a clock signal to the re-timestamp unit and to generate a clock stream to be transmitted along with the transport stream to a plurality of terminals 150.

Regarding claim 8, Mao teaches non-realtime content includes guide data (see col. 4, line 33+).

Regarding claim 11, Mao discloses adjust PCR of the transport streams (see col. 5, lines 20-25). As a result, the timestamps provided by the re-timestamp unit replace timestamps generated by the realtime and non-realtime encoders.

Regarding claim 13, Mao teaches realtime and non-realtime contents intended to be displayed in a single frame are re-timestamped by the re-timestamp unit for synchronization such that the contents are decoded and presented in the same frame (see col. 4, line 46+).

Regarding claim 14, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 1 and are analyzed as discussed in the rejection of claim 1.

Regarding claim 15, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 3 and are analyzed as discussed in the rejection of claim 3.

6. Claims 1-9,11-16, 19 and 21 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Naimpally (US 5,619,337), and in view of Yanagihara (US 5,859,949).

Regarding claim 1, Naimpally discloses encoder 112 comprises video encoder 140, audio encoder 142, data encoder 144 are MPEG-2 encoders for encoding video, audio and data in PES packets, the PES packets are supplied to a transport encoder/multiplexer 146, the multiplexer 146 formats each of the PES packets into one or more transport packets, these packets are transmitted to FIFO buffer 150, the transport packets then sent to multiplexer 116, the multiplexer 116 reformats and interleaves the transport packets for the individual single program transport streams into a multi-program transport streams (see figures 1A, 1B and, col. 3, lines 50-61; col. 5, line 30+). Inherently, the apparatus comprising:

a first encoder (MPEG data encoder 144) configured to encode non-realtime content into encoded non-realtime content slices;

a second encoder (MPEG encoder 140 and encoder 142) configured to encode the realtime content into encoded realtime content slices;

a remultiplexer (multiplexer 146) configured to repacketize the encoded non-realtime content slices and the encoded realtime content slices into transport packets. In addition, Naimpally discloses providing timing signal containing timing information for each of respective one of the transport packets in the stream and means for encoding the time information (see col. 10, lines 60-65). However, Naimpally does not specifically disclose a re-timestamp unit coupled to the remultiplexer and configured to provide

timestamps to be applied to the transport packets in order to synchronize realtime and non-realtime content.

Yanagihara teaches a re-timestamp unit 12 coupled to the remultiplexer 10, Multiplexer 10 supplies the multiplexed signal at a bit rate of 30 Mbps to the PCR restamping circuit 12. PLL circuit 5 supplies the output of circuit 8, identified herein as data PCR', also, to PCR restamping circuit 12 which replaces in the multiplexed signal the PCR data with the PCR' data (see figure 5 and col. 7, lines 58-67). Necessarily, re-timestamps unit is configured to provide timestamps to be applied to the transport packets in order to synchronize the realtime and non-realtime contents. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Naimpally and McLaren to use the teaching as taught by Yanagihara in order to synchronize the realtime and non-realtime contents.

Regarding claim 2, Naimpally in view Yanagihara teaches an apparatus as discussed in the rejection of claim 1. Obviously, the apparatus is located within a head end of a cable distribution system in order to provide transport packets to multiple receivers, thereby increase efficiency for the system.

Regarding claim 3, Yanagihara teaches 27 MHz system clock (see figures 2 and 5) that read on the clock unit.

Regarding claim 4, Naimpally discloses the fullness of buffer 150 is monitored by buffer control circuitry 148. If the number of transport packets in the buffer 150 exceeds a high water mark, the buffer control circuitry 148 sends a signals to encoders 140, 142, 144 to decrease either the rate at which PES packets are provided or size of each PES packet. If the number of transport packets in the buffer 150 falls below a low water mark, the controller 148 sends a signal to the encoders 140, 142, 144 which causes the controller to increase the rate at which PES packets are provide or to increase the size of a PEC packet (see col. 5, lines 49-62). However, Naimpally does not specifically disclose rate control unit (controller 148) configured to determine an encoding rate for the non-realtime content and to provide the determined encoding rate for the non-realtime content to non-realtime encoder. It is obvious that the rate control unit (controller 148) configured to determine an encoding rate for the non-realtime content and to provide the determined encoding rate for the non-realtime content to non-realtime encoder in order to avoid underflow and overflow.

Regarding claim 5, Naimpally teaches the rate at which PES packets are provided is determined based on the fullness of buffer 150 as discussed in the rejection of claim 4. However, Naimpally does not specifically disclose the encoding rate for the non-realtime content is determined based at least in part on an output rate of the transport stream. It is obvious that the encoding rate for the non-realtime content is determined based at least in part on an output rate of the transport stream in order to prevent underflow and overflow

Regarding claim 6, Naimpally teaches the controller 148 determines the rate which PES packets are provided based on the fullness of buffer 150 as discussed in the rejection of claim 4. However, Naimpally does not specifically disclose the rate control unit determines an encoding rate for the realtime content based on at least in part on an output rate of the transport. It is obvious that the rate control unit determines an encoding rate for the realtime content based on at least in part on an output rate of the transport in order to avoid underflow and overflow.

Regarding claim 7, Naimpally teaches the realtime content includes video and audio contents (see figure 1B).

Regarding claim 8, Naimpally teaches the data includes PAT, PMT and CAT (see col. 6, lines 35+). Therefore, Naimpally teaches the non-realtime content includes guide data.

Regarding claim 9, Naimpally teaches realtime encoder includes a video encoder configured to encode the realtime video content; and an audio encoder configured to encode the realtime audio content (see figures 1A, 1B).

Regarding claim 11, Yanagihara teaches the timestamps provided by the re-timestamp unit replace timestamps generated by the realtime and non-realtime encoders (see figure 5).

Regarding claim 12, Naimpally teaches transport encoder/multiplexer 146 reads on the slice combiner (see figures 1A, 1B).

Regarding claim 13, Naimpally in view of Yanagihara teaches an apparatus as discussed in the rejection of claim 1. However, neither Naimpally nor Yanagihara specifically discloses realtime content and non-realtime content intended to be displayed in a single frame are re-time stamped by the re-timestamp unit such that the contents are decoded and presented in the same frame. Official Notice is taken that it is obvious that realtime content and non-realtime content intended to be displayed in a single frame are re-time stamped by the re-timestamp unit such that the contents are decoded and presented in the same frame is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify Naimpally and Yanagihara to use the well-known teaching in the art in order to allow viewer to view video and interactive application at the same time in the same screen.

Regarding claim 14, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 1 and are analyzed as discussed in the rejection of claim 1.

Regarding claim 15, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 3 and are analyzed as discussed in the rejection of claim 3.

Regarding claim 16, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 5 and are analyzed as discussed in the rejection of claim 5.

Regarding claim 19, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 12 and are analyzed as discussed in the rejection of claim 12.

Regarding claim 21, the limitations of the method correspond to the limitations of the apparatus as being claimed in claims 7 and 8, and are analyzed as discussed in the rejection of claims 7-8.

7. Claims 10, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naimpally (US 5,619,337) in view of Yanagihara (US 5,859,949) as applied to claim 5 or 16 above, and further in view of Adams (US 6,044,396).

Regarding claim 10, Naimpally in view Yanagihara teaches an apparatus as discussed in the rejection of claim 5. However, neither Naimpally nor Yanagihara specifically

discloses the encoding rate for the non-realtime content is determined based on a maximum bit rate anticipated for the encoded realtime content.

Adams discloses the selector 404 selects data from the video buffers 400 until all video buffers 400 are empty; the selector 404 passes data form the application buffer 402 to the output buffer 406. The selector 404 continues reading from the application buffer 402 until data is detected in one or more of the video buffers 400 (see col. 4, line 65-col. 5, line 7; col. 7, lines 6-27). Necessarily, the encoding rate for the non-realtime content is determined based on a maximum bit rate anticipated for the encoded realtime content. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Naimpally and Yanagihara to use the teaching as taught by Adams in order to provide realtime content to receiver on time.

Regarding claim 17, the limitations of the method being claimed correspond to the limitations of the system being claimed in claim 10 and are analyzed as discussed in the rejection of claim 10.

Regarding claim 18, Naimpally in view of Yanagihara teaches an apparatus as discussed in the rejection of claim 16. However, neither Naimpally nor Yanagihara specifically disclose the allocating the bit rate for the encoded non-realtime content among a plurality of pages of non-realtime content.

Adams teaches allocating the bit rate for the encoded non-realtime content (see figure 10 and col. 7, lines 6-49). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Naimpally and Yanagihara to use the teaching as taught by Adams in order to prevent underflow and overflow.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9.

Eyer et al. (US 6,401,242) teaches encoding IPG data with global programming services.

McLaren (US 5,867,208) teaches encoding system and method for scrolling encoded MPEG stills in an interactive television application.

Wu (US 6,594,271) teaches implementation of opportunistic data on a statistical multiplexing encoder.

Coleman et al (US 5,844,620) teaches method and apparatus for displaying an interactive television program guide.

Chen et al (US 5,917,830) teaches splicing compressed packetized digital video stream.

Tahara et al (US 5,894,328) teaches multiplexing encoded audio, video, and other data (figure 1).

Linnartz (US 6,131,161) teaches slice encoder 102 encodes data into slices (see figure 1).

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

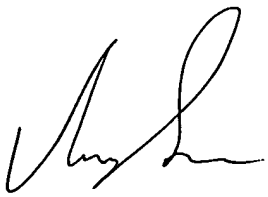
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P Huynh whose telephone number is 703-305-1889. The examiner can normally be reached on 8:00-5:30.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Faile can be reached on 703-305-4380. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 703-306-0377.

Son P. Huynh
November 17, 2003



VIVEK SRIVASTAVA
PRIMARY EXAMINER